

Notice of Allowability

Application No.

10/765,069

Examiner

Greg F. Cunningham

Applicant(s)

LIM ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment received 07/17/2007.
2. ☒ The allowed claim(s) is/are 1-12.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

1. This action is responsive to amendment filed 07/17/2007.
2. The disposition of the claims is as follows: claims 1 – 12 are pending in the application. Claims 1 and 7 are independent claims.

Claim Rejections - 35 USC § 102

3. In view of amended claims and review of cited references, 102 rejections are withdrawn.

Allowable Subject Matter

4. Claims 1 - 12 are allowed.
5. The following is an examiner's statement of reasons for allowance:
Applicant's amended independent claim 1 stands novel over the related prior art. For instance, the related art of Zeller et al., (US 7,054,461 B2), provides for scanned image scanned; black representing ink color' and 'white representing paper color'; ratio of mid frequencies to total energy ... Median less – (Table 13); metric finds the minimum value over all blurring Threshold of pixel thresholds-T of the within-class variance; and metric calculation is a way of finding an optimum threshold for a bimodal distribution. In it, for each candidate threshold T the within-class variance is calculated as $W(T) = P(<T) * Var(<T) + P(>=T) * Var(>=T)$ Where P(T) is the fraction of the distribution less than T and Var(<T) is the variance of that set, and similarly for P(>=T) and Var(>=T). The least value for W(T) indicates the strength of peaks in the pixel value distribution. Pixel Variance The variance of the pixel values in the image blurring is related to the amount of contrast, and to the degree of blur. 1% Point on This metric represents the gray

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level value on ink color Histogram the histogram that is greater than 1% of the Distribution other pixel values in the distribution. Ratio of pixel values Minimum value of Sums(values 1/3 to 2/3 blurring at parts that fall within Peaks between peaks)/sum(between peaks) for sub- within image on the Histogram areas within image. Histogram Variance of pixel histogram blurring Histogram Variation Variance of pixel histogram below threshold, blurring Near Low Peak Contrast (High peak-low peak)/high peak, where the blurring peaks correspond to peaks in the histogram of pixel values. Ratio of energy in Energy from DC+4 to 1/3 Nyquist/total blurring mid frequencies to energy total energy Ratio of energy in Energy from 1/3 Nyquist to 99% Nyquist/cluster dot high frequencies to total energy printing total energy Ratio of energy near Energy near Nyquist freq/total energy DPI of printer Nyquist frequency to total energy Ratio of energy in 3.sup.rd level wavelet subband coeff/total 3.sup.rd level, blurring Wavelet Subband to where the subband may be the approximation, Total Energy in horizontal, or vertical coefficients in the Wavelet Level wavelet decomposition.

Although Zeller discusses dividing total energy of image as a whole and not as an energy ratio of the character blocks as claimed in independent claims 1 and 7. Furthermore, Zeller does not disclose “a block classification part for dividing the received image into blocks and classifying the divided blocks into character blocks and background blocks; a character block energy calculation part for calculating an average energy ratio of the character blocks; and a blurring detection part for calculating an average energy ratio of the character blocks and determining whether or not the image is blurred based on a comparison of the average energy ratio with a predetermined threshold” as claimed by independent claims 1 and 7.

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Therefore as claimed by the combined elements of amended independent claims 1 and 7, the cited references and prior art of record lack separately and in combination the elements of amended claims.

Claims 2-6 and 8-12 depend from allowable independent claims 1 and 7, respectively, and therefore are also allowed.

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Responses

7. Responses to this action should be mailed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231. If applicant desires to fax a response, (703) 872-9306 may be used for formal communications.

Inquiries

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory F. Cunningham whose telephone number is (571) 272-7784.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Greg Cunningham

Examiner, Art Unit 2624

8/17/2007



MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600